



BMP Maintenance

Public Works Department

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Outline

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3. Annual Inspection
3. BMP Maintenance
4. Examples
5. What about these?
6. Staff Contacts





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Why Maintenance?

- Legal Requirement per stormwater agreement
- Critical to the functioning of BMPs as designed
- Aesthetic value
- “An ounce of prevention is worth a pound of cure.”







04/07/2008



Definitions

BMP: Stormwater Best Management Practice.

Examples include: wet pond, constructed wetland, bioretention area, and sand filter.

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BMC: BMP Maintenance Certifier.

This certification is required to submit BMP Annual Maintenance Certifications of stormwater BMPs to the City of Durham.

AAM: Annual Anniversary Month

AAM is the month each year during which the BMP you own (or are responsible for) is to be certified by a qualified professional



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Background

- The City of Durham Stormwater Services Division (SSD) requires annual inspections (e.g., maintenance certifications) of all BMPs in operation within the City limits.
- Annual maintenance certifications are required under the recorded agreement executed by the owner and the City during the construction drawing and permitting process for each Stormwater BMP.
- Noncompliance with the agreement may subject the owner to specific enforcement actions by the City as outlined in the agreement and in the City's Code of Ordinances.



BMC Program

- Annual maintenance inspections shall be submitted per the City's BMC program.
- How do I get certified as a BMC?
- Requirements for an annual maintenance inspection report.

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How to become a BMC

1. Submit a completed application.
2. Need to be a NCPE or NCRLA.
3. Submit a resume to verify a minimum of 10 construction/maintenance inspections with in the last 12 months.
4. Successful completion of a BMP maintenance and inspection training workshop (e.g. Workshop offered by Dr.Bill Hunt of NC State University).

Note that applicants maintaining a valid BCE (BMP Certifying Engineer) certification need not submit item 3 above.

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Annual Maintenance Certification

The following supporting documents are included with the hard copy of the annual certification:

1. Two (2) copies of the sealed Inspection Report.
2. Two (2) copies of the photographic journal for the facility.
3. Two (2) hard copies of a sealed up-to-date Operation and Maintenance Manual for the facility.
4. Two (2) copies (in *Word format on a CD*) of the *up-to-date Operation and Maintenance Manual for the facility*.
5. Two (2) copies of the Owner's Financial Disclosure for the operation, inspection, and maintenance of the BMP.



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CERTIFICATION STATEMENT

- Based upon **MY** physical and mechanical inspection of the constructed BMP facility on _____, I hereby certify that the functional and public safety aspects of the facility are in compliance with the intent of the original design plans and with City of Durham, operation and maintenance standards and requirements.
- Executed by a registered North Carolina Professional Engineer (PE) or a North Carolina Registered Landscape Architect (RLA), who has been certified by the City of Durham as a BMC, and who has experience in the inspection, maintenance, and operation of stormwater BMPs of a nature similar in scope to that certified to in this certification.



Conditional Certification

A Conditional Certification(CC) is similar to a Certification except that it is conditioned on the completion of specific remedial repair items to be completed by the BMP Owner/Permittee in accordance with a sealed Implementation Schedule (not to exceed 90-days from the date of the Conditional Certification) that has been approved by the City.

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Requirements –Conditional Certification

The following supporting documents are included with the hard copy of the conditional certification:

1. Two copies of sealed Inspection Report;
2. Two copies of a sealed list of remedial items that must be completed by the Owner/Permittee to meet the standards for formal certification;
3. Two copies of a sealed Implementation Schedule, submitted for City of Durham review and approval;
4. Two copies of Photographic Journal of the BMP inspection; and
5. Two copies of Owner's Financial Disclosure.

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Conditional certification (Contd..)

- A Certification is to be submitted once all the “conditions” in the CC have been completed.
- If Owner/Permittee fails to provide a Conditional Certification by the last day of the Annual Anniversary Month or fails to provide a Certification within the time frame specified in the Implementation Schedule that Owner/Permittee may be deemed a violator of the City’s illicit discharge ordinance and may be subject to the penalties and fines of Chapter 70, Article V of the City of Durham Code of Ordinances.

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Engineering Modification Report(EMR)

An Engineering Modification Report, herein referred to as an “EMR,” is an inspection report for a facility that was either not completed, or was “completed” in a manner that significantly differs (negatively) from that detailed in the original design plans, or is in such a state of disrepair or functional failure that a Certification cannot be provided reasonably within the 90-day threshold specified in the Conditional Certification definition provided previously.

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EMR (contd..)

An EMR must include the following:

1. Two original sealed Engineering Modification Report (EMR) Submittal Forms
2. Two copies of the sealed Inspection Report;
3. Two copies of a Photographic Journal;
4. Two copies of a sealed (by an NCPE only) Engineering Modification Plan (e.g., a scaled drawing with any required details), to be reviewed and approved by SSD;
5. Two copies of a sealed Implementation Schedule, also to be reviewed and approved by SSD; and
6. Two copies of the Owner's Financial Disclosure.



EMR..

- Implementation schedule shall not exceed 2 years from the date of 1st EMR
- Monitoring report every 90 days until certified.
- Only a registered North Carolina Professional Engineer (NCPE) will be permitted to submit an EMP in the City of Durham.
- Up on completion of work, an annual inspection shall be submitted to the City.
- If the above are not done, the BMP owner may be deemed a violator of the City's illicit discharge ordinance and may be subject to the penalties and fines of Chapter 70, Article V of the City of Durham Code of Ordinances.

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Operation and Maintenance (O&M) Manual

- Specific guidelines (sealed by NCPE/NCRLA) to be followed in the maintenance of the BMP during the upcoming year.
- To be included in the annual certification report.
- O&M manual to include both functional and aesthetic elements of maintenance.
- Specific to a particular facility.
- If there is an existing O&M Manual, the manual shall be updated and modified as appropriate for the activities to be accomplished and/or monitored in the upcoming year.

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Owner's Maintenance Guide for Stormwater BMPs

- Prepared by SSD that Can be used as a guide in the maintenance of BMP's in the City.
- To acquaint BMP Owners/Permittees with the essential functional elements of the BMP on their property
- To help BMP Owners/Permittees identify the maintenance requirements for the BMP on their property.
- To help BMP Owners/Permittees establish and implement an effective BMP maintenance and inspection program for the BMP on their property.
- Provide a general overview of common maintenance elements.

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Maintenance guide

- Guide for general purposes only
- Each section of the Maintenance Guide addresses the functional elements and typical maintenance requirements for each type of structural BMP used in the City of Durham.
- Can be used as a basis for the preparation of an O&M Manual.
- Not be confused with an actual O&M Manual for an BMP facility.

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Owner's Financial Disclosure (OFD)

- Copy of the Owner's (i.e., Permittee's, Responsible Party's, etc.) budget, expenditures, and accounts for the operation and maintenance of a stormwater BMP during the previous year
- An OFD is for the operation, inspection, and maintenance of the BMP only.
- Shall be a part of a Certification, CC, or EMR.
- Details of OFD shall be considered confidential.

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Maintenance Includes ..

- Emergency Maintenance –Maintenance after floods or other emergencies
- Debris and Litter Removal
- Sediment Removal and Disposal
- Stability and Erosion Control
- Maintenance of Mechanical Components
- Vegetation Maintenance
- Maintenance of the Aquatic Environment
- Insect Control

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A photograph of a dry pond in a wooded area. The pond is a shallow, rectangular depression in the ground, bordered by a concrete ditch. A concrete riser structure is visible on the left side of the pond. The background shows a line of trees and a grassy field.

Dam Embankment

Riser Structure

Concrete Ditch

Pond Floor

Dry Pond



Riser Structure

Dam Embankment

Lake

Wet Pond





A photograph of a grassy embankment, likely a stormwater management area. In the foreground, a black metal post stands on a concrete base. The ground is covered with sparse, young green grass and patches of bare soil. To the left, a calm pond reflects the sky. In the background, a dense line of trees borders the area. A black chain-link fence runs along the right side of the embankment. A blue text box with a red border is overlaid in the center of the image.

Poor Grass Cover



Poor Grass Cover

A wide-angle photograph of a lush green field, likely a golf course or a large park. The field is covered in dense, vibrant green grass. In the background, a dense line of trees separates the field from a row of buildings, possibly a clubhouse or residential structures. The sky is overcast and grey. A blue rectangular box with a red border is superimposed over the center of the image, containing the text "Excellent Grass Cover" in white, bold, serif font.

Excellent Grass Cover





What is this strange looking color?

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Invasive

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10/02/2008





02/25/2009



03/13/2008



02/25/2009



Bare areas on the slopes
near the inlets,
recommendations are to
apply top soil, seed and
wheat straw.

01/02/2006





01/02/2006



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Summary

- Recommend meeting or discussing with staff on annual maintenance certifications
- Specifically on conditional certifications and EMR



Useful links

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http://www.durhamnc.gov/departments/works/stormwater_bmp.cfm

http://portal.ncdenr.org/c/document_library/get_file?uuid=7b297ecd-955a-417e-a024-56639b068f54&groupId=38364

<http://portal.ncdenr.org/web/wq/ws/su/bmp-manual>



Staff Contacts

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Questions and Comments

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